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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/919,685

07/31/2001

Arthur J. Neufeld

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08/12/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

LIU, SHUWANG

ART UNIT

PAPER NUMBER

2634

6
DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,685

Applicant(s)

NEUFELD ET AL.

Examiner

Shuwang Liu

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-20 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-13, 15, 16 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 10 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Burns (EP0994573A2 see IDS).

As shown in figure 2, Burns discloses:

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a method of decreasing the time necessary to correlate with incoming signals from a base station in a wireless communication system, comprising:

identifying a current PN offset (page 6, lines 20-35 and page 9, lines 46-50);

identifying a subsequent PN offset (page 6, lines 20-35 and page 9, lines 46-50); and

using a PN mask to jump from the current PN offset to the subsequent PN offset (page 6, lines 20-35 and page 9, lines 46-50).

4. Claims rejected under 35 U.S.C. 102(e) as being anticipated by Neufeld et al. (US 6,639,907).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As shown in figures 3, 5 and 6, Neufeld et al. discloses:

(1) regarding claim 1:

a method of decreasing the time necessary to correlate with incoming signals from a base station in a wireless communication system, comprising:

identifying a current PN offset (column 11, line 1-40);

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identifying a subsequent PN offset (column 11, line 1-40); and
using a PN mask to jump from the current PN offset to the subsequent PN offset (column 11, line 1-40 and column 12, lines 12-64).

(2) regarding claim 2:

a method for generating a pseudo-random number (PN) sequence used to search for a transmitted signal in a wireless communication system, comprising:

determining a current phase of the PN sequence (column 11, line 1-40 and column 12, lines 12-64);

determining a new phase for the PN sequence where a new search for the transmitted signal is to be started (column 11, line 1-40 and column 12, lines 12-64);

determining a difference between the new and current PN phases;
selecting a PN mask based at least in part on the determined phase difference, wherein the PN mask is used to adjust the phase of the PN sequence by a particular amount determined by a value of the PN mask (column 11, line 1-40 and column 12, lines 12-64); and

generating the PN sequence with the new phase based at least in part on the selected PN mask (column 11, line 1-40 and column 12, lines 12-64).

(3) regarding claim 3:

further comprising: partitioning the determined phase difference into a coarse phase adjustment and a fine phase adjustment, and wherein the PN mask is selected based at least in part on the coarse phase adjustment (column 11, lines 24-32).

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(4) regarding claim 4:

wherein the coarse phase adjustment is in increments of 64 PN chips (column 11, lines 24-32).

(5) regarding claim 5:

further comprising: adjusting the phase of the PN sequence by the fine phase adjustment (column 11, lines 24-32).

(6) regarding claim 6:

wherein the adjusting is achieved by slewing the PN sequence one PN chip at a time (column 11, lines 24-32).

(7) regarding claim 7:

further comprising: defining a search window to be used for the new search, wherein the search window comprises a range of PN phases to be searched, and wherein the new PN phase is dependent on values for one or more parameters defining the search window (column 10, lines 10-26).

(8) regarding claims 8 and 9:

wherein the new PN phase is dependent on a width of the search window and an offset for the search window (it is inherent from the definition of the search window, see column 6, lines 35-46 of US 5,790,589 in IDS).

(9) regarding claim 11:

further comprising: generating a primary PN sequence with a PN generator having a linear sequential shift register (LSSR), and wherein the PN sequence with the new phase is generated by applying the selected PN mask to the primary PN sequence (column 10, line 54-column 11, line 11).

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(10) regarding claim 12:

wherein the PN mask is selected from a plurality of possible PN masks (column 11, lines 1-32).

(11) regarding claim 13:

wherein the plurality of possible PN masks are capable of providing PN sequences separated from each other by at most 64 PN chips (column 11, lines 12-23).

(12) regarding claims 15 and 16:

wherein the communication system is a CDMA system, the CDMA system implements IS-95 or cdma2000 standard (column 11, lines 1-24).

(13) regarding claims 21:

a receiver unit in a wireless communication system comprising a pseudo-random number (PN) generator operative to determine a current phase of a PN sequence used to search for a pilot and a new phase for the PN sequence where a new search for the pilot is to be started, determine a difference between the new and current PN phases, receive a PN mask indicative of the determined phase difference, wherein the PN mask is used to adjust the phase of the PN sequence by a particular amount determined by a value of the PN mask, and generate the PN sequence with the new phase based at least in part on the received PN mask (column 11, line 1-40 and column 12, lines 12-64).

(14) regarding claim 22:

further comprising: a searcher element coupled to the PN generator and operative to receive and correlate data samples for a received signal with the

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generated PN sequence to provide a correlated value used to detect the pilot (column 10, lines 10-26).

(15) regarding claim 23:

further comprising: a controller operative to direct the PN generator and the searcher element to search for the pilot within a particular search window representative of a range of PN phases (column 10, lines 10-26).

(16) regarding claim 24:

wherein received PN mask is selected from a plurality of possible PN masks, and wherein the plurality of possible PN masks are capable of providing PN sequences separated from each other by at most 64 PN chips (column 11, lines 1-32)..

Allowable Subject Matter

5. Claims 17-20 are allowed.

6. Claims 10 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach and suggest a method for searching for a pilot in a wireless communication system, comprising determining a PN offset associated with a transmission source of the transmitted signal to be searched,

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and wherein the new PN phase is dependent on the PN offset associated with the transmission source.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu
Primary Examiner
Art Unit 2634

August 6, 2004